Crystal Oscillation Type Deposition Controller Sensor [CRTS Series]

The CRTS series sensors are used with ULVAC crystal oscillation type deposition controllers (Quartz Crystal Monitors). The sensors come in many different types and configurations for compatibility with most any type of deposition equipment.

**Features**

**[Single-sensor]**
- Single crystal sensors can be supplied with or without water cooling which is useful in systems that are baked at high temperatures.
- The small single sensors can be easily positioned inside the chamber, and are available either with or without vacuum feedthrough.
- Long life external oscillators are available for use with these sensors.

**[Multi-sensor]**
- Multi crystal sensors are available that hold 6 or 12 crystals.
- A vacuum motor inside the sensor head indexes the crystals with high reliability.
- The sensor head can be removed from the system for reloading with fresh crystals.
- If the CRTM controller detects an abnormal crystal, or one that has reached its end of life, it sends a signal to the sensor which automatically switches to the next crystal.
# Crystal Oscillation Type Deposition Controller Sensor [CRTS Series]

## Selection Guide

**CRTS Series Selection**

![Flowchart showing CRTS Series Selection](chart.png)

**Single Sensor**

- **CRTS-4U**
- **CRTS-6U**
- **CRTS-0**
- **CRTS-4**
- **CRTS-6**
- **CRTS-80**

**Multi Sensor**

- **CRTS-12NS**
- **CRTS-M6**

*1 When using CRTS-80 series (Option).
*2 Part attached to a thing of CRTM.
*3 Not use in Bakeable sensor.

## Sensor Connection Diagram

### Single Sensor

- **CRTM**
- **External cable**
- **Oscillator control cable**
- **Internal cable**
- **Auxiliary cable**

### Multi Sensor

- **Controller for sensor**
- **Signal introduced flange #1**
- **Osm connector**
- **Oscillator**
- **Vacuum external control cable**
- **Vacuum internal control cable**

*1 Introduced flange set (Option).
*2 Part attached to a thing of CRTM.
If the temperature is higher than this limitation, wind the cable around the water cooling pipe, and use aluminum foil to protect it.

Equipped crystal number 12pcs 6pcs

Accessories

Model CRTS-12NS CRTS-M6

Application High rate or long time continuous evaporation at 350˚C (662˚F) or less *1

Equipped crystal number 12pcs 6pcs

Baking temperature N/A

Cooling water pipe
- Pipe out diameter 4mm
- Water capacity 200cc/min
- Tube connection 1/4inch

Senser head dimensions (without cooling water pipe) φ31×H19mm φ34×H19mm φ28×H19mm φ45×H30mm φ31×H20mm φ34×H20mm

Options

1 The sensor head temperature should be kept within the range of 0˚C to 80˚C (32˚F to 176˚F) during measurement. The temperature limitation for the internal cable is 150˚C (302˚F). If the temperature is higher than this limitation, wind the cable around the water cooling pipe, and use aluminum foil to protect it.

2 Please specify 6MHz crystals when ordering.

3 Optional length cables are shipped separately and need to be attached to the sensor.

4 Feedthrough flange (with OSM connector and Hermetic terminal)×1, Cooling water feedthrough flange ×1 (with cooling water pipe)×1 Cooling water tube length is selectable from 50mm to 800mm. Please refer to the flange except UFC070.

Specifications and Accessories: Multi Sensor

Model CRTS-12NS CRTS-M6

Application High rate or long time continuous evaporation at 350˚C (662˚F) or less *1

Equipped crystal number 12pcs 6pcs

Baking temperature N/A

Cooling water pipe
- Pipe out diameter 1/4inch
- Water capacity 1L/min
- Tube connection 1/4inch

Mass Approx.2kg Approx.1kg

Senser head dimensions (without cooling water pipe) φ104mm ×98mm (Approx.) φ65mm ×98mm (Approx.)

Controller
- Internal status indication (LED) BUSY, ERROR, RETRYEND
- Digital input INT, CNT, STOP
- Digital output Sensor No., BUSY, ERROR, RETRYEND
- Utility DC24V, 3.0A
- Mass Approx.2kg
- Dimension W 100mm×D 250mm×H 98mm

Accessories (☐ Standard accessories, △ Options, — N/A)

Oscillator *5

Oscillator control cable *5

Internal cable *6

Auxiliary cable (150mm)

OSM connector *3

Crystal (5MHz,5pcs)

Pipe fitting 1/4inch (company standard, Conflat compatible)

Pipe fitting 3/8inch (company standard, Conflat compatible)

Other flange

Dimensions below are for the OSM connector and Hermetic terminal

- Oscillator (12pcs)
- OSM connector (6pcs)
- Feedthrough flange set (4 UFC070) (company standard, Conflat compatible)
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[CRTS Series]